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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/813,389	03/31/2004	Tadashi Yamamoto	A8701	5820

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EXAMINER

EVANS, GEOFFREY S

ART UNIT	PAPER NUMBER
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1725

DATE MAILED: 04/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/813,389

Applicant(s)

YAMAMOTO ET AL.

Examiner

Geoffrey S. Evans

Art Unit

1725

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 03 February 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-83 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-30,32-35,37-70,72-79 and 81-83 is/are rejected.
- 7) ☒ Claim(s) 31,36,71 and 80 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_.

### DETAILED ACTION

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1,7,22, and 27 are rejected under 35 U.S.C. 102(b) as being anticipated by Troitski in U.S. Patent No. 6,399,914. Troitski discloses as shown in figure 3 laser material processing with a first pulse having a pulse width (5 milliseconds) greater than a second pulse (10 nanoseconds).

3. Claims 1,2,4,5,11,12,14,15,21,22,24,25,26,29,30,34 are rejected under 35 U.S.C. 102(b) as being anticipated by Tanabe et al. in Japan Patent No. 2001-326,190

A. Tanabe et al. disclose a method of laser material processing by sending a first laser pulse followed by a second laser pulse that is shorter in width than the first pulse width. Tanabe et al. further disclose that the duration of the pulses may overlap (see figure 1a) or not (figure 1b), and that the energy of the pulses can be the same or the first pulse can have more energy than the second pulse.

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 1725

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 3 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanabe et al. in Japan Patent No. 2001-326,190 A in view of Jennings in U.S. Patent Application Publication No. 2003/0196995 A. Jennings teaches measuring pulse widths at full width half maximum (see paragraph 36). It would have been obvious to adapt Tanabe et al. in view of Jennings to provide this to measure pulse widths by a known standard.

7. Claims 6 and 16,28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanabe et al. in Japan Patent No. 2001-326,190 A in view of Sasaki et al. in U.S. Patent Application Publication No. 2003/0216012 A1. Sasaki et al. teaches using pulses of different vectors of polarization (see paragraph 136). It would have been obvious to adapt Tanabe et al. in view of Sasaki et al. to provide this so that more energy is absorbed by the material.

Art Unit: 1725

8. Claims 7 and 17,27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanabe et al. in Japan Patent No. 2001-326,190 A in view of Timans in U.S. Patent Application Publication No. 2002/0137311 A1. Timans teaches that increased absorption can be seen at different wavelengths depending upon the angle of incidence (see paragraph 61) and using different wavelengths (see paragraph 71). It would have been obvious to adapt Tanabe et al. in view of Timans to provide pulses of different wavelengths of light to ensure absorption by the material.

9. Claims 8,18,23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanabe et al. in Japan Patent No. 2001-326,190 A in view of Yamazaki et al. in U.S. Patent Application Publication No. 2004/0214411. Yamazaki et al. teach laser processing with a pulse frequency greater than 100 kHz (see paragraph 122). It would have been obvious to adapt Tanabe et al. in view of Yamazaki et al. to provide this as it would efficiently laser process the material.

10. Claims 9,10,19,20,32,33,35,38,39,40,43,44,45,46,47,48,49,50,54-56,57-59,63-65,66,68-70,72-74,75,77-79, and 81-83 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanabe et al. in Japan Patent No. 2001-326,190 A in view of Sun et al. in U.S. Patent No. 6,574,250. Sun et al. teach using an envelope (burst) to send a plurality of short pulses (see column 3, lines 1-22). It would have been obvious to adapt Tanabe et al. in view of Sun et al. to provide this to permit on-the-fly processing of the material.

11. Claims 37, 53,62,67, and 76 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanabe et al. in view of Sun et al. as applied to claims 35,48,57,66,

Art Unit: 1725

and 75 above, and further in view of Yamazaki et al. in U.S. Patent Application Publication No. 2004/0214411. Yamazaki et al. teach laser processing with a pulse frequency greater than 100 kHz (see paragraph 122). It would have been obvious to adapt Tanabe et al. in view of Sun et al. and Yamazaki et al. to provide to efficiently laser process the material.

12. Claims 41, 52, and 61 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanabe et al. in view of Sun et al. as applied to claims 38, 48, and 57 above, and further in view of Timans in U.S. Patent Application Publication No. 2002/0137311 A1. Timans teaches that increased absorption can be seen at different wavelengths depending upon the angle of incidence (see paragraph 61) and using different wavelengths (see paragraph 71). It would have been obvious to adapt Tanabe et al. in view of Sun et al. and Timans to provide pulses of different wavelengths of light to ensure absorption by the material.

13. Claims 42, 51, and 60 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanabe et al. in view of Sun et al. as applied to claims 38, 48, and 57 above, and further in view of Sasaki et al. in U.S. Patent Application Publication No. 2003/0216012 A1. Sasaki et al. teaches using pulses of different vectors of polarization (see paragraph 136). It would have been obvious to adapt Tanabe et al. in view of Sun et al. and Sasaki et al. to provide this so that more energy is absorbed by the material.

14. Claims 31, 36, 71, and 80 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Art Unit: 1725


15. Applicant's arguments with respect to claims of record have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Geoffrey S Evans whose telephone number is (571)-272-1174. The examiner can normally be reached on Mon-Fri 6:30AM to 4:00 PM, alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Dunn can be reached on (571)-272-1171. The fax phone number for the organization where this application or proceeding is assigned is (703)-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571)-272-1300.

GSE

  
Geoffrey S. Evans  
Primary Examiner  
Group 1700